

position inside the cylindrical barrel (5) of the sleeve (4) of the microinjector (1);

- rotating the driving means to advance the syringe plunger (12) in a downward axial direction through the syringe barrel (7) thereby aspirating and depositing a portion of the contents of the syringe barrel (7) through the side port holes (15A),(15B) of the cannula (2);
- rotating the guide nut (8) to effectively withdraw the syringe (3) and cannula (2) in an upward axial direction at a predetermined distance away from a previous neural target site; and
- repeating steps involving rotating the driving means to deliver a portion of the contents of the syringe barrel (7) and rotating the guide nut (8) to reposition the cannula (2), thereby resulting in sequential delivery of multiple portions of the contents of the syringe barrel (7) in a three-dimensional spiral array per single trajectory at a predetermined neural target site.

37. (Previously Presented) The method according to Claim 36, characterized in that the driving means comprises a plunger driver (11) and a drive nut (10).